

S/020/61/140/001/020/024
B127/B101

Measurement of thallium...

is atomic. The mean evaporation heat of thallium between 519 and 924°K is 40.72 kcal/mole. The authors used L. V. Gurvich's equation $R \ln P = Q_g^* - Q_{kr}^* - \Delta H_o^0/T$ (ZhFKh, 34, 217 (1960)) to calculate ΔH_o^0 . There are 1 figure, 1 table, and 12 references: 7 Soviet and 5 non-Soviet. The reference to English-language publication reads as follows: F. F. Collemann, A. Egerton, Phil. Trans., A 234, 177 (1934).

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov), Sofiya
Institute of Chemical Technology, Bulgaria

PRESENTED: April 6, 1961, by V. I. Spitsyn, Academician

SUBMITTED: March 29, 1961

Table 1. Vapor pressure of thallium

Legend: (1) number of experiment, (2) sec, (3) g, (4) g/cm²·sec, (5) mm Hg, (6) kcal/mole.

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~~NESMEYANOV~~, Andrey Nikolayevich, prof., doktor khim. nauk;
~~FAYNBOIM~~, I.B., red.; NAZAROVA, A.S., tekhn. red.

[Radioactive isotopes in nature]Radioaktivnye izotopy v pri-
rode. Moskva, Izd-vo "Znanie," 1962. 35 p. (Novoe v zhizni,
nauke, tekhnike. IX Seriya: Fizika i khimiya, no.16)
(MIRA 15:9)

(Radioisotopes)

NESMEYANOV, A.N.; PRISELKOV, Yu. A.; KARELIN, V. V.

"The Vapor Pressure of Yttrium"
Report presented at the International Atomic Energy Agency
Symposium on Thermodynamics of Nuclear Materials, 21-25 May 62
Vienna, Austria.

S/195/62/003/004/002/002
E075/E436

AUTHORS: Pozdeyev, V.V., Dzantiyev, B.G., Nesmeyanov, An.N.
TITLE: Utilization of hot atom reactions for the investigation
of the intermolecular energy transfer processes
during radiolysis of organic materials

PERIODICAL: Kinetika i kataliz, v.3, no.4, 1962, 613-614

TEXT: The cyclohexene-tolan system was investigated to assess the possibility of using hot radioactive atoms to produce labelled cyclohexene excited molecules. Study of the stabilization of such molecules in different media was expected to give information on the energy transfer from the excited to solvent molecules. Excitation and labelling of cyclohexene molecules was carried out by exchanging H atoms with a hot tritium atom. It was found that the resistance of cyclohexene to decomposition increased with the concentration of tolan in the mixture. However the increasing tolan concentration had almost no effect on the specific activity of cyclohexene. Thus for the system investigated, changes in the concentration of the aromatic component did not influence the

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S/195/62/003/004/002/002
E075/E436

Utilization of hot atom ...

stabilization process of the excited molecules of cyclohexene but decreased effectively its radiolysis. Other systems must be studied to test the general applicability of the method. There are 2 figures and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet
im. M.V. Lomonosova. Khimicheskiy fakul'tet
(Moscow State University imeni M.V.Lomonosov
Chemical Division)

SUBMITTED: March 26, 1962

Card 2/2

NESMEYANOV, An.N.; DZANTIYEV, B.G.; POZDEYEV, V.V.; SIMONOV, Ye.F.

Reaction of recoil atoms of tritium with benzene. Radiokhimiya 4
no.1:116-122 '62. (MIRA 15:4)

(Tritium) (Benzene)

AMAR NAT; NESMEYANOV, An.N.

Recoil effect in inner complexes of cobalt during the reaction
 $\text{Co}^{59} (n, 2n) \text{Co}^{58}$. Radiokhimiya 4 no.1:122-124 '62. (MIRA 15:4)
(Cobalt--Isotopes) (Cobalt compounds)

POZDEYEV, V.V.; NESMEYANOV, An.N.; DZANTIYEV, B.G.

Effect of halogen-containing additives on the reaction
of tritium recoil atoms with benzene. Radiokhimiya
(MIRA 15:11)
4 no.4:398-404 '62.
(Tritium) (Benzene) (Iodine)

POZDEYEV, V.V.; NESMEYANOV, An.M.; DZANTIYEV, B.G.

Effect of the aggregate state on the reactions of
tritium recoil atoms with hydrocarbons. Radiokhimiya
(MIRA 15:11)
4 no.4:404-410 '62.
(Tritium)
(Hydrocarbons)

S/180/62/006/005/005/011
E073/E535

AUTHORS: Karelin, V.V., Nesmeyanov, An. N., Priselkov, Yu. A. (Moscow)

TITLE: More accurate data on the vapour pressure of metallic yttrium

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no.5, 1962, 117-118

TEXT: In an earlier published paper, the authors studied the vapour pressure of metallic yttrium of a purity of 99.9% (without taking into consideration gaseous admixtures). According to those results, the vapour pressure can be expressed by

$$\lg P_{\text{mm Hg}} = 7.8130 - \frac{15\,803}{T} \quad (1)$$

This agreed with results obtained for yttrium of 99.5% purity (0.1% Ta, 0.4% O₂). New investigations were carried out with high-purity yttrium containing only traces of metallic admixtures and less than 0.1% gaseous admixtures. The obtained data are tabulated for the temperature range 1132 to 1460°C. According

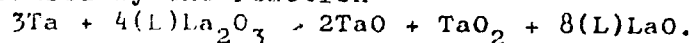
Card 1/2

More accurate data on the vapour ... S/180/62/000/005/005/011
E073/E535

to these data, applying the method of least squares, the vapour pressure of high-purity metallic yttrium obeys the following relation:

$$\lg P_{\text{mm Hg}} = 8.0786 - \frac{18515}{T} \quad (2)$$

From this, the sublimation heat was determined at 84.71 kcal/g·atom. The divergence between the here obtained and the earlier results is explained by the evaporation of volatile sub-oxides of yttrium, the existence of which was confirmed by means of a resonance mass spectrometer. A similar phenomenon was observed by Goldstein, Walsh and White (On the use of tantalum Knudsen cells in high temperature thermodynamic studies of oxides, J.Phys.Chem., 1960, 64, No.8, p.1087) who proved by means of a mass spectrometer that the increased rate of evaporation of La oxide from tantalum crucibles is caused by the reaction



The relative limit error in measuring the vapour pressure was +20% for the radioactive and +24% for the non-radioactive specimens. There is 1 table.

SUBMITTED: June 5, 1962

Card 2/2

35997

S/169/62/000/002/003/004
D228/D302

5.2100

AUTHORS: Karelin, V.V., Nesmeyanov, A.N., Priselkov, Yu.A., and
Chou K'un-Ying

TITLE: Measuring the pressure of metallic yttrium vapor

PERIODICAL: Moscow. Universitet. Vestnik. Seriya II, khimiya, 1962, no. 2, 1962, 40 - 41

TEXT: The authors measured the pressure of metallic yttrium vapor by the integral version of Knudsen's effusion method. The amt. of evapd. matter was detd. either photometrically or radiometrically at different temps.; the results are given in a table. The value of the heat of evapn., which equals 72.31 kg-cal/mole, was found for the temp. range 1361-1761°K from the equation; $\log P(\text{in mm Hg}) = 7.8130 - 15803/T$. The heat of sublimation of yttrium at 298°K was calcd. at 85.71 kg-cal/mole the value for the coefficient of evaporation being ~ 0.05 . The coincidence of data, obtained with different equipment and samples, is considered to illustrate the reliability of the results, as is their general agreement with those of

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X

Measuring the pressure of metallic ... S/169/62/000/002/003/004
D228/D302

K.A. Gshneyder. There are 1 table and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: D.R. Stull et al, Advances in Chem., no. 18, 1956.

ASSOCIATION: Kafedra radiokhimi (Department of Radiochemistry)

SUBMITTED: June 21, 1961

Card 2/2

S/032/62/028/003/008/017
B101/B138

AUTHORS: Nesmeyanov, An. N., Pozdeyev, V. V., and Klass, Ya.

TITLE: Measurement of the activity of organic compounds containing tritium

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 3, 1962, 305 - 307

TEXT: A variant of K. E. Wilzbach's method (Ref. 3, see below) is described. The tagged organic substances are heated with zinc dust, nickel oxide, and water in an ampoule at 640°C for 3 hr. The temperature is measured with a Chromel-Alumel thermocouple connected to an ~~ERM~~-47 (ERM-47) apparatus. The resulting methane and hydrogen (pressure 20 mm Hg) are pumped into an ~~СБМ~~-8 (SBM-8) counter, and cyclohexane is added up to a total pressure of 40 mm Hg. The activity is measured with a ~~Б~~ (B) radiometer. By using cyclohexane instead of butane as quenching gas, the $\text{CH}_4 + \text{H}_2$ concentration can be increased and the size of the apparatus reduced. The method was used to measure the activity of tagged cyclohexene, cyclohexadiene-1,3, and adipic, succinic and glutaric acids. The error of measurement was not more than 1%. The accuracy of measurement

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Measurement of the activity...

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does not depend on the amount of H_2O added. Therefore it is possible to convert tagged organic compounds without H_2O addition, which is important for measuring only slightly radioactive preparations. There are 3 figures, 1 table, and 4 references: 1 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: Nucleonics, 16, no. 3, 62 (1958); R. L. Wolfgang, C. F. Mackay. Nucleonics, 16, no. 10, 69 (1958); K. E. Wilzbach, L. Kaplan, W. G. Brown. Science, 118, 522 (1953). ↙

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

Card 2/2

NESMEYANOV, An.N.; FIRSOVA, L.P.

Hot synthesis of compounds tagged with radioactive carbon.
Usp.khim. 31 no.12:1453-1477 D '62. (MIRA 16:2)

1. Moskovskiy gosudarstvennyy universitet, khimicheskiy
fakul'tet, kafedra radiokhimii.
(Chemistry, Organic—Synthesis) (Carbon—Isotopes)

NESMEYANOV, AN. N.

2

37519
S/020/62/144/001/017/024
B119/3144

AUTHORS: Men'kov, A. A., Komissarova, L. N., Karelin, V. V.,
Pricelkov, Yu. A., Nesmeyanov, An. N., and Spitsyn, Vikt. I.,
Academician

TITLE: Investigation of high-purity metallic scandium

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 1, 1962, 122 - 125

TEXT: 99.5% pure Sc was produced by high-vacuum distillation of 97 - 97.5%
Sc. The pure metal was studied metallographically and tested for its
behavior to O_2 , N_2 (in a device designed by R. D. Shapovalova and

I. A. Vasil'yeva), and differently concentrated solutions of HCl , H_2SO_4 ,
 HNO_3 , and $NaOH$ at 25, 50, and 100°C. The results were compared with those
obtained for 97% Sc. The polished, non-etched surface of 97% Sc reveals
the grain boundaries in polarized and nonpolarized light. No second phase
appears in spite of 0.9% oxygen content. With high-purity Sc, the grain
boundaries are only visible in polarized light. 99.5% Sc starts reacting
at 200°C with O_2 , at more than 600°C with N_2 (formation of ScN). Dissolving

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Investigation of high-purity...

tests with the agents mentioned were made under conditions effecting a reaction of zero order. The dissolution rate constant for Sc of both degrees of purity was $0.75 \text{ mg} \cdot \text{l} \cdot \text{cm}^{-2} \cdot \text{min} \cdot \text{g}^{-1}$ at 25°C for H_2SO_4 and HCl , and 0.015 for HNO_3 . According to calculations, the activation energy of the dissolving process was $9.0 \pm 0.2 \text{ kcal/g-eq}$. Sc reacts very slowly with NaOH solutions of more than 10% . From $97 - 99.5\%$, the purity of the sample has a much stronger effect on the physical than on the chemical properties of Sc . There are 4 figures and 2 tables. The most important English-language reference is: F. H. Spedding, A. H. Daane, C. Warkefield, D. H. Dennison, Trans. Metallurg. Soc. AIME, 218, no. 4, 608 (1960).

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: January 12, 1962

Card 2/2

38107

S/020/62/144/002/019/028
B101/B144

5.2300

AUTHORS: Karelin, V. V., Nesmeyanov, An. N., and Priselkov, Yu. A.

TITLE: Vapor pressure of metallic scandium

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 2, 1962, 352-354

TEXT: Data of F. H. Spedding, A. H. Daane, G. Wakefield, and D. H. Dennison (Trans. of the Metallurg. Soc. AIME, 218, no. 4, 608 (1960)) on the vapor pressure of Sc were verified by Knudsen's integral effusion method. Sc was evaporated out of a tantalum crucible, and the vapor was condensed in a quartz receiver. The amount of condensate was determined radiometrically using Sc^{46} , and, in some cases, photocolormetrically using arsenazo. Sc^{46} was obtained by bombarding Sc with slow neutrons from a nuclear reactor, and its purity was checked with a gamma spectrometer or by liquid chromatography. Results: (1) At a constant temperature of 1430°K , saturation was reached at an $S/K\sigma$ ratio of 800-60,000 (S - area of vaporizing surface; K - Klausen's coefficient; and σ - area of effusion port). (2) In the range 1301 - 1644°K it is found that $\log P_{\text{sc}}$ (mm Hg) = $8.6553 - 17576/T$. (3) The heat of sublimation of Sc is given by

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Vapor pressure of metallic ...

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$\Delta H_T = 80.42 \text{ kcal/g-atom}$; $\Delta H_{2980} = 82.28 \text{ kcal/g-atom}$. (4) The present data are a little higher than those given by Spedding et al. (errors: $\pm 15\%$ with the use of radioactive samples, and $\pm 20\%$ with inactive samples) which are believed to be too low by reason of a systematic error. (5) The results are significant for the vacuum metallurgy of rare-earth elements. There are 2 figures and 1 table.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: January 22, 1962, by Vikt. I. Spitsyn, Academician

SUBMITTED: January 12, 1962

Card 2/2

POZDEYEV, V.V.; NESMEYANOV, An.N.; DZANTIYEV, B.G.

Tritium recoil atoms and intramolecular migration of
energy. Kin.i kat. 4 no.2:318-319 Mr-Ap '63. (MIRA 16:5)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskiy fakul'tet.
(Benzene derivatives) (Tritium)

NESMEYANOV, A. N.

Co⁵⁸ recoil effect after the reaction (γ , n) in complex
compounds of cobalt. Radiokhimiya 5 no. 1:125-134 '63.
(MIRA 16:2)

(Cobalt compounds)

(Cobalt isotopes)

(Nuclear reactions)

NESMEYANOV, An.N.; FILATOV, E.S.

Role of high energy reactions in the processes of stabilization
of bromine 82 hot atoms in alkyl bromides. Radiokhimiya 5
no.3:378-389 '63. (MIRA 16:10)

(Bromine isotopes) (Alkyl bromides)

DAKAR, G.M.; IOFA, B.Z.; NESMEYANOV, An.N.

Extraction of complex acids with oxygen-containing solvents.

Part 1: Extraction of micro- and macroquantities of antimony
(V) with alcohols, ethers, and esters. Radiokhimiia 5 no.4:

428-436 '63.

(MIRA 16:10)

(Antimony isotopes) (Extraction (Chemistry))
(Hydrolysis)

AVDONINA, Ye.N.; NESMEYANOV, An.N.

Reactions of tritium recoil atoms in mixtures of cyclopentane
with cyclohexane. Radiokhimiia 5 no.4:514 '63. (MIRA 16:10)

(Tritium) (Cyclopentane) (Cyclohexane)

NESMEYANOV, An.N.; TSZYAN TAY-VAN [Chiang T'ai-wang]; FILATOV, E.S.

Interaction of hot atoms of tritium with aliphatic alcohols
in the liquid phase. Radiokhimiia 5 no.4:515-516 '63.
(MIRA 16:10)

(Tritium) (Alcohols)

NESMEYANOV, An.N.; MUDROVA-YABLONITSKA, V.

Effect of Co^{58} recoil after (γ, n) -reaction in complex compounds
of cobalt: Co(III) triglycinate and vitamin B_{12} . Radiokhimiia
5 no.4:516-519 '63. (MIRA 16:10)

(Cobalt compounds) (Nuclear reactions) (Cyanocobalamin)

AVDONINA, Ye.N.; MUDRA, K.; NESMEYANOV, An.N.

Behavior of recoil atoms of carbon-14 in mixtures of pyridine with
benzene and cyclohexane. Radiokhimiya 5 no.5:633-635 '63.
(MIRA 17:3)

VAN LIAN-SHEN' [Wang Liang-shên]; BEKKER, A.; YAN CHZHI-CHZHEN' [Yang Chih-chên];
NESMEYANOV, An.N.

Separation of terpenes by gas-liquid chromatography. Izv.vys.ucheb.
zav.;khim.i khim.tekh. 6 no.4:597-600 '63. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Kafedra
radiokhimii.

NESMEYANOV, An.N.

Radiochemistry. Khim. v shkole 18 no.5:7-14 S-0 1962. (MIRA 17:3)

NESMEYANOV, An.N.; POZDEYEV, V.V.

Hot synthesis of compounds labeled with tritium. Usp. khim.
32 no.7:773-779 J1 '63. (MIRA 16:8)

1. Khimicheskiy fakul'tet Moskovskogo gosudarstvennogo
universiteta.

BERDONOSOV, Sergey Serafimovich; VLASOV, Lev Grigor'yevich;
NESSEYANOV, An.H., doktor khim. nauk, prof., retsenzent;
KLYUCHNIKOV, N.G., kand. khim. nauk, dots., retsenzent;
METEL'SKAYA, G.S., red.

[Application of radioisotopes; a textbook for teachers]
Primenenie radioaktivnykh izotopov; posobie dlia uchite-
lei. Moskva, Prosveshchenie, 1964. 117 p.
(MIRA 18:9)

NESMEYANOV, An.N.; VAN LYAN-SHEN' [Wang Liang-shen]; BEKKER, A.

Interaction of tritium recoil atoms with terpenes. Radiokhimiia
6 no.3:314-323 '64. (MIRA 18:3)

AVDONINA, Ye.N.; NESMEYANOV, An.N.; UN KHAO. MTN

Behavior of tritium recoil atoms in some binary systems.
Radiokhimiia 6 no.3:323-329 '64. (MIRA 18:3)

FILATOV, E.S.; NESMEYANOV, An.N.; CHEPYZHEV, Yu.B.

Reactions of hot bromine atoms in liquid binary systems. Radiokhimiia
6 no.5:595-604 '64. (MIRA 18:1)

BARAKAT, M.F.; FIRSOVA, L.P.; NESMEYANOV, An.N.

Reaction of carbon-14 recoil atoms with pyridine and its homologs.
Radiokhimiia 6 no.5:605-610 '64. (MIRA 18:1)

Reaction of carbon-14 recoil atoms with pyrrole, 2-methylpyrrole, and
piperidine. Ibid.:626-630

FILATOV, P.S.; GENTSEYANOV, A.M.

Effect of the process of excitation energy transfer on the hot atom
reaction yield. Vest.Mosk.un.Ger.3:Khim. 39 no.4:13-18 Ti-Ag '64.

(MIRA 18:8)

1. Kafedra radiofiziki Moskovskogo universiteta.

LUK'YANOV, V.B.; NESMEYANOV, An.N.; YEREM'YEV, A.P.

Products of reaction of labeled carbon oxides with a mixture
of acetylene and hydrogen in an electrical discharge. Vest.
Mosk. un. Ser. 2: Khim. 19 no.6:11-13 N-D '64. (MIRA 18:3)

1. Kafedra radiokhimi Moskenskogo universiteta.

NESMEYANOV, An.N.; TSZYAN TAY-YAN [Chiang T'ai-wang]; FILATOV, E.S.

Reactions of tritium hot atoms and the process of excitation
energy transfer. Vest. Mosk. un. Ser. 2: Khim. 19 no.6:
27-28 N-D '64. (MIRA 18:3)

1. Kafedra radiokhimii Moskovskogo universiteta.

LUK'YANOV, V.B.; NESMEYANOV, An.N.; YEREMEYEV, A.P.

Selecting optimum conditions for the synthesis of carbonyl compounds in an electric discharge. Zav. lab. 30 no.10:1248-1251 '64.
(MIRA 18:4)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

AVDONINA, Ye.N.; NESMEYANOV, An.N.

Influence of the phase on the character of the reactions
of tritium recoil atoms in mixtures of cyclohexane with
benzene. Dokl. AN SSSR 154 no.4:851-853 F '64.

(MIRA 17:3)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
Predstavleno akademikom V.I. Spitsynym.

NESMEYANOV, Nik A.; ZHEZHLIKOVA, S.T.; REUTOV, O.A.

Interaction of phosphorylides with diphenyl iodonium salts.
Izv. AN SSSR Ser. Khim. no.1:194-196 '65. (MIRA 18:2)

1. Moskovskiy gosudarstvennyy universitet.

AYDCHINA, Ya.N.; BARANOVSEY, I.B.; UN LING-MIN; NEUMAYANN, H.G.

Reactions of recoil atoms of tritium and C-14 with heterocyclic
amines. Radiokhimiya 7 no.2:220-227 '65.

(MIRA 13:10)

BARAKAT, M.F.; FIRSOVA, L.P.; NESMEYANOV, An.N.

Reaction of C^{14} recoil atoms in mixtures containing α -picoline. Radio-
khimiia 7 no.3:361-363 '65. (MIRA 18:7)

NESMEYANOV, An.N.; TRAPP, G.

Study of the thermodynamic properties of some iron alloys in
the closed γ -region. Zhur. fiz. khim. 39 no.2:356-359 F '65.
(MIRA 18:4)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

SIMONOV, Ye.F.; NESMEYANOV, An. N.

Radiation conservation of amino acids in the course of their
interaction with tritium recoil atoms. Vest. Mosk. un. Ser.
2:Khim. 20 no. 5:28-30 S-O '65. (MIRA 18:12)

1. Kafedra radiokhimii Moskovskogo gosudarstvennogo universiteta.
Submitted July 21, 1965.

GOLUBTSOV, I.V.; NESMEYANOV, An. N.

Vacuum vaporization of tungsten, molybdenum and tantalum. Vest.
Mosk. un. Ser. 2:Khim. 20 no. 5:31-33 S-O '65. (MIRA 18:12)

1. Kafedra radiokhimii Moskovskogo gosudarstvennogo universiteta.
Submitted April 23, 1965.

NESMEYANOV, An.N.

Reactions of hot atoms in condensed systems. Vest. Mosk. un.
Ser. 2: Khim. 20 no.6:3-16 N-D '65. (MIRA 19:1)

1. Kafedra radiokhimii Moskovskogo universiteta. Submitted
June 24, 1965.

L 23225-66 EWT(m) DIAAP
 ACC NR: AP6013601 SOURCE CODE: UR/0189/65/000/005/0028/0030
 AUTHOR: Simonov, Ye. F.; Mesnyanov, A. N. 26
 ORG: Department of Radiochemistry, Moscow State University (Kafedra radiokhimii Moskovskogo gosudarstvennogo universiteta)
 TITLE: Radiation preservation¹⁹ of aminoacids during the interaction with tritium-recoil atoms
 SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 5, 1965, 28-30
 TOPIC TAGS: amino acid, neutron irradiation, radioactive decay, lithium compound, tritium, alpha particle
 ABSTRACT: The effect of the relative content of lithium salt in irradiated specimens on the radiation survival of a mother compound and on the yield of the basic decomposition products and their specific activities at low irradiation times was studied. Specimens of l-glutamic acid, dl-methionine and l-cysteine with the relative contents of lithium carbonate of 91, 80, 67, 50, 33, 20 and 9% were irradiated. The total weight of the irradiated specimens was 20-22 mg. Since the radiation composition during neutron irradiation of mixtures of organic substances with lithium salts is somewhat higher than in the absence of the latter, the lithium salt of glutamic acid was also irradiated for comparison. Quartz ampules containing the specimens were evacuated to a pressure of 10^{-2} mm Hg, sealed, placed in aluminum cases, and irradiated for 15 minutes by a stream of slow neutrons of $0.87 \cdot 10^{13} \text{ cm}^{-2}$.
 Card 1/2 UDC: 541.15+539.163 2

L 23225-66

ACC NR: AP6013601

sec-1. It was shown that the activity of HT for all aminoacids studied reaches a maximum at the relative contents of 50% lithium salt and that the share of activity attributable to CH₃T of the total activity of the gaseous phase for glutamic acid is linearly varied from 10% for a specimen with 80% lithium salt to 63% for a specimen with 9% lithium salt. Thus, the significant contribution of alpha-particles to the radiation decomposition of the mother compound becomes apparent at low relative contents of the lithium salt even at small irradiation times. Tabulated data indicates that the maximum radiation preservation of the mother compound for the acids studied is observable at 33% relative contents of lithium salt in the irradiated specimens which corresponds to the equimolar ratio of the irradiated components. Orig. art. has: 2 tables. [JPRS]

SUB CODE: 07 / SUBM DATE: 21Jul65 / ORIG REF: 003 / OTH REF: 001

L 278/2-66 ~~Est(m)/Enp(t)/Enp(b)~~ ~~IsP(c)~~ ~~Id/jg~~
~~ACC NR~~ AP5027908 SOURCE CODE: UR/0189/65/000/005/0031/0033

AUTHOR: Golubtsov, I. V.; Nesmeyanov, An. N.

ORG: Moscow State University, department of radio chemistry (Moskovskogo universiteta, kafedra radiokhimii)

TITLE: Investigation of evaporation of tungsten, molybdenum, and tantalum in vacuum.
 4455, 27 4455, 27 4455, 27

SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 5, 1965, 31-33

TOPIC TAGS: tungsten, molybdenum, tantalum, metal evaporation, tungsten evaporation, molybdenum evaporation, tantalum evaporation, vacuum evaporation

ABSTRACT: The evaporation rate of W, Mo, and Ta in a vacuum of $8 \cdot 10^{-9}$ — $2 \cdot 10^{-4}$ mm Hg has been investigated. Specimens of zone-melted, high-purity metals marked with radioactive isotopes Mo^{99} , W^{185} , and Ta^{182} were heated to 2063—3203K by passing an electric current or by electron bombardment. It was found that as the pressure dropped to 10^{-4} — 10^{-6} mm Hg, the evaporation rate of all tested metals increased. A further pressure drop below 10^{-6} — 10^{-7} mm Hg brought about considerably weaker additional effect. The composition of residual gases also affects the evaporation rate. At a pressure of 10^{-7} mm Hg and lower the evaporation proceeds in the form of molecules; at higher pressures, such as 10^{-4} mm Hg, it proceeds in the form of oxides. Orig. art. has: 1 table. [WW]

metal evaporation "

SUB CODE: 11/ SUBM DATE: 23Apr65/ ORIG REF: 006/ ATD PRESS: 4/78
 Card 1/1 UDC: 541.15+539.163

L 20604-66 EWT(m)/EWP(j)/EWA(h)/EWA(l) RM

ACC NR: AP6010715

SOURCE CODE: UR/0189/66/000/001/0060/0064

AUTHOR: Kuklin, Yu. S.; Firsova, L. P.; Nesmeyanov, A. N.

ORG: Department of Radiochemistry, Moscow State University (Kafedra radiokhimii Moskovskogo gosudarstvennogo universiteta)

TITLE: The reaction of accelerated tritons with benzene in the solid phase

SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 1, 1966, 60-64

TOPIC TAGS: radiolysis, quantum yield, ion beam, radiochemical reaction

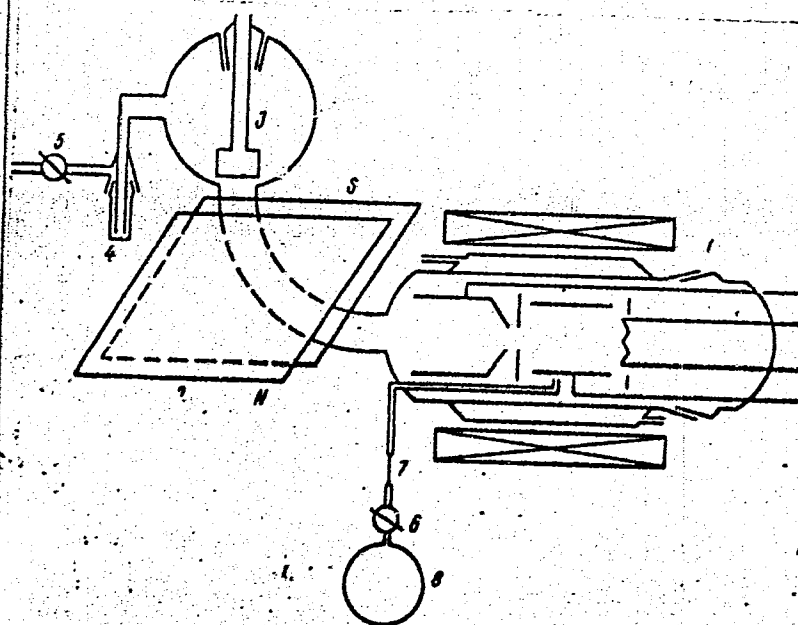
ABSTRACT: This paper deals with the action of 2.5 kv tritons on frozen benzene. The nature of chemical and radiological effects produced by accelerated ions is similar to that of "hot" atoms from nuclear reactions, e. g., $Li(n,\alpha)T$. The advantage of using accelerated ions, aside from simpler experimental conditions, is that the need to compensate for radiolysis by gamma rays, neutrons and alpha particles is obviated. The 2.5 kv tritons employed in this study have much lower energies than the recoil tritium atoms from nuclear reactions. The following equipment was used:

Card 1/3

UDC: 541.15+539.163

L 20604-66

ACC NR: AP6010715



Card 2/3

L 20604-66

ACC NR: AP6010715

3

The target, covered with sublimed benzene from trap 4, was irradiated for 30 minutes; the irradiated sample, after transfer to the cold trap, was subjected to vapor-phase chromatography. The progress of elution was registered with a scintillation counter. The results showed that 2.5 kV tritons produce considerable destruction of the benzene molecule, forming in the process cyclohexene, 1,3-cyclohexadiene, 1,4-cyclohexadiene, and a number of unidentified products. The unidentified fractions, with one exception, had longer retention times than the cyclohexenes or benzene (the stationary phase was di(2-cyanoethyl) ether/fire brick). A considerably larger amount of label is incorporated than in experiments with recoil atoms from Li(n, α)T. Similarly the radiolytic yields are larger than those obtained with recoil atoms. Orig. art. has: 2 figures and 2 tables. 7

[VS]

SUB CODE: 07/ SUBM DATE: 06Jan65/ ORIG REF: 003/ OTH REF: 008/ ATD PRESS:

4224

Card

3/3

BK

BOLGSKAYA, Ye.N.; NESMEYANOV, D.D.

Methods and primary results of the complex regional geophysical studies in eastern Ciscaucasia. Trudy NII neftegaza no.13:95-110 '65. (MIRA 18:9)

NESMEYANOV, D. V., Cand Geol-Min Sci -- (diss) "Structural peculiarities of the anterior anticlinal zones of Dagestan in connection with petroleum-gas-^{bearing qualities}~~resources~~ of Mesozoic deposits." Mos, 1957. 16 pp (Mos Order of Lenin and Order of Labor Red Banner State Univ im M. V. Lomonosov, Geol Faculty, Chair of Geology and Geochemistry of ^{Constructible Minerals}~~Mineral Resources~~), 100 copies. —
Bibliography: p 16 (KL, 2-58, 112)

NESMEYANOV, D.V.

BROD, I.O.; TSATUROV, A.I.; NESMEYANOV, D.V.

**Prospects for oil and gas bearing of Mesozoic carbonate deposits
in western Ciscaucasia. Geol. nefti 1 no.3:1-11 Kr '57.
(Caucasus, Northern--Petroleum geology) (MLRA 10:8)
(Caucasus, Northern--Gas, Natural--Geology)**

~~NESEMEYANOV, D.Y.~~

Structural characteristics and oil- and gas-bearing potentials of
the western anticlinal zone in Daghestan. Geol. nefti i no.12:
16-24 D '57. (MIRA 11:1)

1. Moskovskiy gosudarstvennyy universitet.
(Daghestan--Geology, petroleum)
(Daghestan--Gas, Natural--Geology)

NESMEYANOV, D.V.; KOCHAR'YANTS, S.B.; FAYNGERSH, L.A.

Reflection of the structure of the Mesozoic sediments in the northwestern Caspian Sea region on the paleogeologic map of a Pre-Pliocene surface. Neftegaz. geol. i geofiz. no.6:30-35 '63.
(MIRA 17:10)

1. Nauchno-issledovatel'skaya laboratoriya geologicheskikh kriteriyov otsenki perspektiv neftegazonosnosti.

BROD, I.O.; POL'STER, L.A.; HESMEYANOV, D.V.

Geostructural division and oil and gas potentials of Ciscaucasia.
Geol. nefti supplement to no.8:11-63 '58. (MIRA 11:9)

1. Moskovskiy gosudarstvennyy universitet i Kompleksnaya yuzhnaya
geologicheskaya ekspeditsiya AN SSSR.

(Caucasus, Northern--Petroleum geology)

(Caucasus, Northern--Gas, Natural--Geology)

KUPRIN, P.N.; NESMEYANOV, D.V.; SEREGIN, A.M.; BROD, I.O., prof., doktor
geologo-mineral.nauk, red.; MISHUNINA, Z.A., nauchnyy red.;
SEKAL', Z.G., vedushchiy red.; GENNAD'YEVA, I.M., tekhn.red.

[Transactions of the General Southern Geological Expedition]. Trudy
Kompleksnoi iuzhnoi geologicheskoi ekspeditsii. Pod red. I.O.Broda.
Leningrad, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry.
Leningr.otd-nie. No.4. [Geology and oil and gas potentials of the
southern U.S.S.R.; Daghestan] Geologiya i neftegazonosnost' IUGa
SSSR; Daghestan. 1959. 431 p. (MIRA 13:5)

1. Kompleksnaya yuzhnaya geologicheskaya ekspeditsiya, 1956-.
2. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova
(for Kuprin, Nesmeyanov, Seregin). 3. Kompleksnaya yuzhnaya geo-
logicheskaya ekspeditsiya (ITUON) AN SSSR (for Nesmeyanov).
(Daghestan--Petroleum geology)
(Daghestan--Gas, Natural--Geology)

BARKOVSKAYA, K.S.; BEZBORODOV, R.S.; BROD, I.O., prof., doktor geol.-mineral. nauk; BUN'KOV, M.S.; GRINFEL'D, M.I.; ZHIVAGO, N.F.; IHRAGIMOV, D.M.; KUDRYAVTSEV, M.P.; LEONOV, G.P.; MOSKVIN, M.M.; HAZAROV, R.I.; NESMEYANOV, D.V.; NIKOLENKO, V.A.; VYSOTSKIY, I.V., nauchnyy red.; RUSAKOVA, L.Ya., vedushchiy red.; YASHCHURZHINSKAYA, A.B., tekhn.red.

[Geology of the eastern part of the northern slope of the Caucasus]
Geologicheskoe stroenie vostochnoi chasti severnogo sklona Kavkaza.
Pod red. I.O.Broda. Leningrad, Gos.nauchno-tekhn.izd-vo neft. i gorno-
toplivnoi lit-ry, Leningr.otd-nie, 1960. 319 p. (Trudy Kompleksnoi
IUzhnoi Geologicheskoi Ekspeditsii, no.2). (MIRA 13:11)

1. AN SSSR. Kompleksnaya Yuzhnaya Geologicheskaya Ekspeditsiya, 1956-.
2. Vsesoyuznyy nauchno-issled.institut gazovoy promyshlennosti (for Zhivago, Kudryavtsev).
3. Kafedra istoricheskoy i regional'noy geologii (for Leonov, Moskvina).

(Caucasus, Northern--Geology)

BROD, I.O.; BELOV, K.A.; BURSHTAR, M.S.; KOROTKOV, S.T.; NESMEYANOV,
D.V.; TSATUROV, A.I.

Oil and gas potentials of Ciscaucasia in view of the distribution
characteristics of accumulations in the piedmont basins. Trudy
VNIGNI no.32:76-99 '60. (MIRA 14:7)

(Caucasus, Northern--Petroleum geology)
(Caucasus, Northern--Gas, Natural--Geology)

BROD, I.O.; ALEKSIN, A.G.; BELOV, K.A.; KUPRIN, P.N.; NESMEYANOV, D.V.;
POL'STER, L.A.; TSATUROV, A.I.

Middle Caspian oil- and gas-bearing basin; appearance of regularities
in the spread of oil and gas accumulations in central and eastern
Caucasia and in the Kara-Bogaz region. Zakonom. razm. polezn.
iskop. 5:483-535 '62. (MIRA 15:12)

1. Kompleksnaya neftegazovaya geologicheskaya ekspeditsiya AN SSSR,
Moskovskiy gosudarstvennyy universitet, Komitet po koordinatsii nauchno-
issledovatel'skikh rabot pri Sovete Ministrov SSR i Stavropol'skiy i
Checheno-Ingushskiy sovety narodnogo khozyaystva.

(Caspian Sea region—Petroleum geology)
(Caspian Sea region—Gas, Natural—Geology)

ACCESSION NR: AM4033585

2/0100/64/000/0002/0002/0000

SOURCE: Ref. zh. Geofiz., Abs. 238

AUTHOR: Baginskaya, Ye. N.; Broymann, A. R.; Mesnyanov, D. V.

TITLE: Present status of study of the Eastern Caucasus Foreland by geophysical exploration methods in relationship to the direction of further geophysical work in this area

CITED SOURCE: Sb. Geol. i neftegazonomost' Yuga SSSR. Kavkaz. L., Gostoptekhnizdat, 1963, 98-113

TOPIC TAGS: geophysics, geophysical exploration, geology, geological structure, refracted waves method, reflected waves method, seismology, electric exploration, gravimetric survey, magnetic survey

TRANSLATION: The status of geophysical study of the Eastern Caucasus Foreland and its geological structure are discussed. It is concluded that the possibilities of geophysical methods of exploration are far from exhausted with respect to the Eastern Caucasus Foreland. It is proposed that such work be continued in accordance with a uniform plan but on a considerably broader scale. In this work primary

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ACCESSION NR: AR4033685

attention should be given to regional geophysical work along the principal directions intersecting this area. This should be done by a combination of methods, but with emphasis on the refracted and reflected waves methods, electric exploration, and gravimetric and magnetometric surveys. Recommendations are made for ways to locate local uplifts and for carrying out a number of systematic investigations. G. R.

DATE ACQ: 31Mar64

SUB CODE: AS

ENCL: 00

Card 2/2

NESMEYANOV, D.V.; BAGINSKAYA, Ye.N.; KHAKIMOV, M.Yu.

New data on the subsurface structure of the area adjacent to
Kizlyar Bay. Neftegaz. geol. i geofiz. no.3:3-6 '65. (MIRA 18:7)

1. Nauchno-issledovatel'skaya laboratoriya geologicheskikh
kriteriyev otsenki perspektiv neftegazonosnosti, Moskva.

NESMEYANOV, D.V.

Tectonic and structural regionalization of the Volga-Ural territory
and adjacent southern regions. Trudy Neftegaza no. 13:68-72 '65.
(MIRA 18:9)

ACC NR: AP7004548

SOURCE CODE: UR/0011/66/000/006/0063/0071

AUTHOR: Baginskaya, Ye. N.; Nesmeyanov, D. V.; Bulgakova, I. A.; Coyev, V. I.; Khakimov, M. Yu.

ORG: NILNEFTEGAZ, Moscow

TITLE: New data on the structure of the eastern part of Cis-Caucasia on the basis of regional geophysical work

SOURCE: AN SSSR. Izvestiya. Seriya geologicheskaya, no. 6, 1966, 63-71

TOPIC TAGS: telluric current, geophysics

ABSTRACT: The deep structure of Cis-Caucasia was studied in 1962-1964 by geophysical investigations along three regional profiles which cut across the principal structural elements of that region. The greater part of the article is a detailed description of work along each of these profiles. The objectives were tracing the surface of the basement and the underlying sedimentary deposits of the Mesozoic; wherever possible discontinuities in the sedimentary strata also were traced. A wide variety of methods were combined: the refracted waves method, electrical exploration methods (magnetotelluric profiling and sounding and telluric currents methods), as well as gravimetric and magnetometer work. The results are incorporated in Fig. 1, a map of relief of the basement and distribution of local uplifts in the sedimentary strata, and in Figures 2 and 3, which are detailed geophysical cross sections along different profiles. The work was effective in detecting areas most promising for further geological prospecting work, especially for petroleum and gas. Orig. art. has: 3 figures. [JPRS: 38,460]

SUJ CODE: 08 / SUBM DATE: 13Apr65

Card 1/1

UDC: 550.81+530.3(471.6)

0926 1376

NESMEYANOV, G.S., inzh.; KARLSHTADT, M.Ya.

Transportation of resin in tank trucks. Masl.-zhir. prom. 25 no.7:
46 '59. (MIRA 12:12)

1. Gomel'skiy shirovoy kombinat.
(Gums and resins--Transportation)

NESMEYANOV, G.S.

Using pneumatic-tube transportation. Kasl.-zhir.prom. 26
no.4:45 Ap '60. (MIRA 13:6)

1. Gomel'skiy zhirovoy kombinat.
(Gomel'---Soap industry---Equipment and supplies)
(Pneumatic-tube transportation)

NESMEYANOV, M.V., inzh.

Automatic unit for bright nickel plating of parts. Vest, mashinost.
42 no.9:52-53 S '62. (MIRA 15:9)
(Nickel plating--Equipment and supplies)

NESMEYANOV, NIK.A.

20-3-27/59

AUTHORS
TITLE

Nesmeyanov, Nik.A., Reutov, O.A.

The Influence of Substituents on the Strength of Ferrocene-Carboxylic Acids.

PERIODICAL

(Vliyaniye zamestiteley na silu ferrotsenkarbonovykh kislot -R...
Doklady Akademii Nauk SSSR, 1957, Vol 115, Nr 3, pp 518-521 (U.S.S.R. ...)

ABSTRACT

It is known that ferrocene whos the properties of an aromatic compound in the substituent reactions. In the present paper the authors throw a light upon the similar question of the mutual exchange of the influence of the substituents through the ferrocene core. They produced the ferrocenecarboxylic acids with a common formula 100 $= -C_2H_5, -C_4H_9, -H, COOCH_3, -CO_2H, -COCH_3$) and measured their dissociation constants. Furthermore monmethylether of the ferrocenedicarboxylic acid was produced by an uncompleted hydrolysis of the dimethyl-ether of this acid. Furthermore, in addition to the aforementioned, the constants of ferrocenecarboxylic-, butyric-, and benzoic acid are given in table I. The comparison between the dissociation constants shows that the introduction of alkyl into the unsubstituted cycle of the ferrocenecarboxylic acid reduces this constant whereas the introduction of a negative substituent increases it. Thus the acetyl- is 2,4 times stronger than the ferrocenecarboxylic acid. In the benzol series the p-acetyl benzoic acid is 4,2 times stronger than the benzoic acid and the p-carbomethoxylic benzoic acid 3,8 times stronger than the benzoic acid. Thus the influence of the substituents on the dissociation constant of the ferrocenecarbo-

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The Influence of Substituents on the Strength of 20-3-27/59
Ferrocene-Carboxylic Acids.

xylic acid is well comparable to the influence of the same substituents on this constant of the benzoic acid in the p-position. The influence of the substituents is transmitted from one ferrocene cycle to the other. This is confirmed by the ferrocene sulphidation carried out by the authors in the presence of an equimolar quantity of ferrocenecarboxylic acid (competing sulphidation). On this occasion the acid remains unchanged whereas ferrocene is sulphurization almost entirely. Under harder conditions also the acid was sulphurization by the authors. Thus the carboxyl group exercises a passive influence on the unsubstituted cycle of the molecule. It must be emphasized that all up to now well studied systems which effectively transmit the mutual influence have an uninterrupted carbon chain. In principle the ferrocenemolecule differs from the latter in that here a member of the conductive system is produced by an iron atom. The usual data on the individual above mentioned substances and reactions are given in the experimental part. There is 1 table and 5 Slavic references.

PRESENTED
SUBMITTED
AVAILABLE
Card 2/2

By Nesmeyanov, A.N., Academician, March 1, 1957
February 26, 1957
Library of Congress.

NESMEYANOV, N.A.: Master Chem Sci (diss) -- "A study of the interaction of substituents in the ferrocene nucleus". Moscow, 1958. 11 pp (Moscow State Order of Lenin and Order of Labor Red Banner State U im Lomonosov), 110 copies (KL, No 1, 1959, 114)

AUTHORS: Nesmeyanov, Nik. A., Reutov, O. A. 20-120-6-28/59

TITLE: Functional Derivatives of Ferrocene-1,1'-dicarboxylic Acid
(Funktsional'nyye proizvodnyye ferrotsen-1,1'-dikarbonovoy kisloty)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 120, Nr 6,
pp. 1267 - 1270 (USSR)

ABSTRACT: Although the acid mentioned in the title was produced already in 1952 (Ref 1) its derivatives remained unknown with two exceptions (Refs 1,2). In the present paper the authors obtained a number of these derivatives. They are: a) the chlorine anhydride b) from the latter an amide (V) was produced, c) methyl ether of the carbamido-ferrocene-1'-carboxylic acid (VII); d) the above amides (V), and (VII) as well as the amide of ferrocene carboxylic acid can be converted into the corresponding nitriles by heating in acetic anhydride. By heating the acid (VII) at 140° for 20 minutes e) 1-cyano ferrocene-1'-carboxylic acid (VIII) formed in a yield of 55%; f) the nitrile of ferrocene-1,1'-dicarboxylic acid (IX) was obtained in a yield of 30% by heating the amide of this acid in acetic anhydride at 100° during 6 hours; g) by heating the amide of ferrocene carboxylic acid in acetic anhydride at 140° during 40 minutes the nitrile of this

Card 1/3

Functional Derivatives of Ferrocene-1,1'-Dicarboxylic Acid 20-120-6-28/59

acid formed (X); h) a cleavage of the HCl elements from the 2 chlorine anhydride molecules as well as from 2 water molecules takes place under the formation of the anhydride of the ferrocene-1,1'-dicarboxylic acid (XI) due to the action of pyridine on chlorine anhydride (IV) in the presence of water. Constants are given of all substances mentioned and their structure is discussed. According to the aromatic character of ferrocene it was found that the radical $-\text{CCl}_3$ may replace one of the ferrocene hydrogens. In spite of the variation of the decomposition conditions of trichloroacetic acid in the mixture with ferrocene no products of a double trichloromethylation of ferrocene could be observed. There are 1 table and 7 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova
(Moscow State University imeni M.V.Lomonosov)

PRESENTED: February 11, 1958, by A.N.Nesmeyanov, Member, Academy of Sciences, USSR

Card 2/3

Functional Derivatives of Ferrocene-1,1'-Dicarboxylic Acid 20-120-6-28/59

SUBMITTED: February 11, 1958

1. Carboxylic acids--Chemical reactions 2. Ferrocenes--Chemical reactions

Card 3/3

5(3)

AUTHORS:

Nesmeyanov, Nik. A., Reutov, O. A.

SOV/62-59-5-27/40

TITLE:

The Derivatives of 1-Carboxyferrocene-1'-Sulfonic Acid
(Proizvodnyye 1-karboksiferrotsen-1'-sul'fonovoy kisloty)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1959, Nr 5, pp 926-929 (USSR)

ABSTRACT:

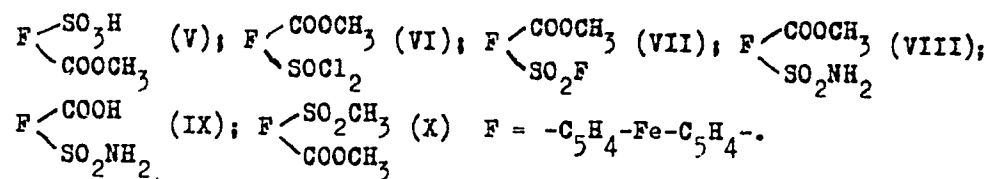
In an earlier paper (Refs 1,2) the authors synthesized a number of ferrocene carboxylic acids of the general formula $Y-C_5H_4-Fe-C_5H_4-COOH$, and on this basis they investigated the influence exercised by the substituent Y upon the acetic character of ferrocene carboxylic acid. The same influence was investigated also in the present paper, but stronger electro-negative substituents were used. For this purpose, the ferrocene carboxylic acid and its methyl ester were sulfonated and the derivatives of the acid already mentioned in the title were investigated. The following 10 derivatives were obtained:

$F \begin{smallmatrix} \swarrow COOH \\ \searrow SO_3 \end{smallmatrix}$ (I); $F \begin{smallmatrix} \swarrow COCl \\ \searrow SOCl_2 \end{smallmatrix}$ (II); $F \begin{smallmatrix} \swarrow CONH_2 \\ \searrow SO_2Cl \end{smallmatrix}$ (III); $F \begin{smallmatrix} \swarrow COOH \\ \searrow SO_2F \end{smallmatrix}$ (IV);

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SOV/62-59-5-27/40

The Derivatives of 1-Carboxyferrocene-1'-Sulfonic Acid



The dissociation constants of several acids (IV, IX) were determined and compared with those of reference 2. This showed that by the presence of a sulfamide substituent the acidity of ferrocene carboxylic acid is increased 5.5-fold and by that of a sulfofluoride substituent even 9-fold (Table 2). This is indicative of the considerable influence exercised by the substituent upon the carboxyl group, which is on the other ring of the ferrocene molecule. There are 1 table and 2 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: September 10, 1958

Card 2/2

5 (3)

AUTHORS:

Kazitsyna, L. A., Lokshin, B. V.,
Nesmeyanov, Nik. A.

SOV/20-127-2-27/70

TITLE:

The Infrared Spectra of Ferrocenes. On the Reciprocal Influence
of Substituents in the Ferrocene Molecule

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 2, pp 333-336 (USSR)

ABSTRACT:

Recently it was proved that the reciprocal influence of the
substituents is passed on through the entire ferrocene system
from ring to ring (Refs 1-3). The authors drew this conclusion
on the strength of the comparison of the dissociation constants
of the ferrocene-carboxylic acids of the type $Y-C_5H_4-Fe-C_5H_4-COOH$.

The substituents form with respect to their effect the following
series: $C_4H_9 < C_2H_5 < H < COOCH_3 < COCH_3 < CN < SO_2NH_2 < SO_2F$. The

substituents on the right side of the hydrogen increase the
dissociation constant of hydroxyl, whereas the left ones reduce
the latter. The reciprocal influence of the substituents can be
expressed in the ferrocene system by the frequency change of a
substituent in one ring under the influence of different substi-
tuents in the second ring of the molecule. Since the frequencies
of the carboxyl group are very characteristic the authors could

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The Infrared Spectra of Ferrocenes. On the Reciprocal
Influence of Substituents in the Ferrocene Molecule

SOV/20-127-2-27/70

carry out spectroscopic investigations for the above-mentioned series in the infrared range also for ferrocene carboxylic acids which have unequal substituents in the other cyclopentadienyl ring. Table 1 shows the obtained spectra. The infrared spectra were absorbed by the solution in order to eliminate additional effects caused by intermolecular interaction. The authors were forced to use chloroform because of the low solubility of most of the compounds investigated, in spite of the favorable properties of tetrachloromethane. Table 2 shows the oscillation frequencies of the C=O group in solutions and in solid state. They show the change of the frequency of the carbonyl group in the transition from solid state to solution. The division of the frequencies in solid state is neutralized in the solution, although one of the carboxyl bands is apparently blurred. This phenomenon is assumed to be caused by an interaction with the solvent. The comparison of the frequencies of the C=O group shows that the frequency of the carbonyl group is considerably changed under the influence of the substituents in the second ring. Furthermore it follows from table 2 that the increase of the electrophilic property of the substituents increases the frequency of the C=O bond of carboxyl

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The Infrared Spectra of Ferrocenes. On the Reciprocal
Influence of Substituents in the Ferrocene Molecule

SOV/20-127-2-27/70

(and of carbomethoxyl) which is located in the other ring of the ferrocene molecule. The substituents are on the strength of this placed in two different series with respect to the influence on carboxyl and on carbomethoxyl. These series agree well with each other and with the series initially mentioned in the abstract. An exception is the position of the absorption bands of the not substituted acids and esters (1682^{-1} , 1712 cm^{-1} respectively), i.e. the hydrogen is located in the series between the groups CH_3CO and CH_3OOC , whereas in the initially mentioned series it was located between the alkyls and the COOCH_3 group. This could not be explained for the time being. The influence of the substituents is passed on from ring to ring in spite of this divergence. There are 2 tables and 3 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

Card 3/4

NEUMAYANOV, Nik.A.; STRUNIN, B.N.

Sulfonation of acyl and carbomethoxy derivatives of ferrocene.
Dokl. AN SSSR 137 no. 1:106-108 Mr-Apr '61. (MIRA 14:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
Predstavleno akademikom A.N. Neumayanovym.
(Ferrocene) (Sulfonation)

NESMEYANOV, Mik.A.; REUTOV, O.A.

Mechanism of bimolecular electrophilic substitution at a saturated carbon atom. Dokl.AN SSSR 144 no.1:126-128 My '62.

(MIRA 15:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
2. Chlen-korrespondent AN SSSR (for Reutov).
(Substitution (Chemistry))

NESMEYANOV, Nik.A.; ZHUZHЛИKOVA, S.T.; REUTOV, O.A.

Sulfuration of phosphorylides. Sulfobetaines. Dokl. AN SSSR 151
no.4:856-858 Ag '63. (MIRA 16:8)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
2. Chlen-korrespondent AN SSSR (for Reutov).
(Phosphorus organic compounds) (Sulfuration) (Betaine)

NESMEYANOV, Nik. A.; NOVIKOV, V. M.; REUTOV, O. A.

Addition of mercuric chloride to the Wittig reagents and the
synthesis of mercury-containing phosphorylide. Izv AN SSSR
Ser Khim no. 4:772-773 Ap '64. (MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet.

NESMEYANOV, Nik.A.; PRAVDINA, V.V.; REUTOV, O.A.

Arsenic ilides stabilized by acyl derivatives. Dokl. AN SSSR 155
no.6:1364-1367 Ap '64. (MIRA 17:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
2. Chlen-korrespondent AN SSSR (for Reutov).

L 20342-66 EWT(m)/ENP(j) WW/JW/BM

ACC NR: AP6012085

SOURCE CODE: UR/0062/65/000/001/0194/0196

AUTHOR: Nesmeyanov, N. A.; Zhuslikova, S. T.; Reutov, O. A.

ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet)

TITLE: Interaction between phosphorylides and diphenyliodonium salts

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 1, 1965, 194-196

TOPIC TAGS: organic phosphorous compound, boron compound, fluoride, organic synthetic process

ABSTRACT: The reaction between phosphorylides and diphenyliodonium boronfluoride results in the formation of the boronfluoride of non-arylated phosphonium salts. An exception is the acetylmethylene-triphenylphosphorane which is arylated on the oxygen of the carbonyl group. Alpha-phenyl-carbomethoxymethylene-triphenylphosphorane, alpha-phenyl-carbomethoxymethyl-triphenylphosphonium boronfluoride, carbomethoxymethyl-triphenylphosphonium boronfluoride, and diphenyliodonium boronfluoride were synthesized. [JPRS]

SUB CODE: 07 / SUBM DATE: 05Jun64 / ORIG REF: 002 / OTH REF: 001

Card 1/1 BK

UDC: 542.91+661.718.1

L 28839-66 EWP(j)/EWT(m) RM

ACC NR: AP6018655

SOURCE CODE: UR/0020/65/162/002/0350/0353

AUTHOR: Nesmeyanov, N. A.; Novikov, V. M.

ORG: none

TITLE: Mercurized phosphonium salts, a new type of quasicomplex compound

SOURCE: AN SSSR. Doklady, v. 162, no. 2, 1965, 350-353

TOPIC TAGS: mercury compound, chloride, solubility, complex molecule, phosphorous compound

ABSTRACT: By treating mercuric chloride with Wittig reagents, the authors prepared mercurized phosphonium salts, which are colorless crystalline substances, insoluble in water or slightly polar organic solvents. The salts show three types of reactivity. When acted upon by bases they are capable of giving off a proton, forming mercurized phosphorylides, i.e., they behave like ordinary phosphonium salts. They can react with a shift in the reaction site like α -mercurized ketones. Finally, in a number of cases, they react with elimination of mercuric chloride, exhibiting quasicomplex properties. This paper was presented by Academician O. A. Rutoy on 10 November 1964. Orig. art. has: 2 formulas and 1 table. [JPNS]

SUB CODE: 07 / SUBM DATE: 23Oct64 / ORIG REF: 008 / OTH REF: 003

Card 1/1 CC

UDC: 661.718.1;661,781

NESMEYANOV, Nik.A.; PRAVDINA, V.V.; REUTOV, O.A.

Reactions of stable arsenic ylides with aldehydes. Izv. AN
SSSR. Ser. khim. no.8:1474-1476 '65. (MIRA 18:9)

1. Moskovskiy gosudarstvennyy universitet.

1

ACC NR: AP7010709

SOURCE CODE: UR/0020/66/171/001/0111/0114

AUTHOR: Mesmeyanov, Nik, A.; Reutov, O. A. (Academician)

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Synthesis and properties of a new phosphorylide (phosphinmethylene) with conjugation of the phosphoran-phosponium type

SOURCE: AN SSSR. Doklady, v. 171, no. 1, 1966, 111-114

TOPIC TAGS: phosphorus compound, organic chemical synthesis, phenyl compound, dye chemical

SUB CODE: 07

ABSTRACT: Triphenylphosphine-triphenylphosphoniummethylene in which the positive charge is distributed uniformly between both triphenylphosphine radicals was recently described. It was found that this compound is photochromic and produces electron paramagnetic resonance signals after illumination. The authors synthesized a vinylog of this compound according to the following scheme:

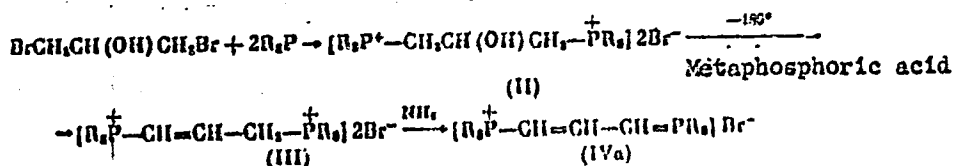
Card 1/3

UDC: 547.241

0930

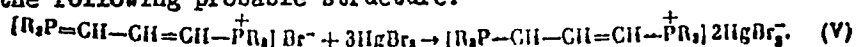
27/3

ACC NR: AP7010709

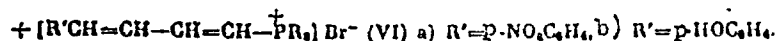
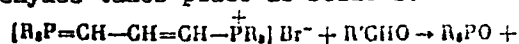


R is phenyl in all cases. $[\text{R}_3\text{P}^+-\text{CH}=\text{CH}-\text{CH}=\text{PR}_3]^+ \text{X}^-$ (IV) b) $\text{X}^- = \text{I}^-$, c) $\text{X}^- = \text{Br}^-$.

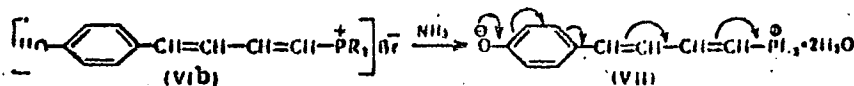
When IVa is mixed with a methanol solution of an excess of mercury bromide, a compound is formed with the following probable structure:



Reaction of IVa with aldehydes takes place as follows:



Salt VIb was not precipitated but was converted instead by the action of ammonia to a betaine VII, a new dye of the merocyanine type.



This betaine is a brick red powder which reprecipitates with two tightly bound

Card 2/3

ACC NR: AP7010709

molecules of water of crystallization. The compound forms intensely colored solutions: yellow in alcohol, crimson in chloroform, dichloroethane and acetone, and red-violet in tetrahydrofuran. These solutions are noticeably thermochromic. When the temperature is raised, the color of the solutions becomes more intense and deeper the original color is restored when the solution is cooled to the former temperature. Each step of the synthesis is described in detail. [JPRS: 40,351]

Card

3/3

NESMEYANOV, N.K., KOCHETKOV, N.K.

Mercuric Chloride

Addition of mercuric chloride to acetylenic acids and esters. Uch. zap. Mosk. un.,
no. 132, 1950

9. Monthly List of Russian Accessions, Library of Congress, October 195²~~3~~, Uncl.

PA 14/4946

NESMEYANOV, S. A.

USSR/Medicine - Hygiene and Sanitation Jun 48
Medicine - Water Supply

"Review of 'Assanation of Reservoirs Against
Stagnant Water' by S. N. Cherkinskiy," S. A.
Nesmeyanov, 2 pp

"Gig i San" No 6

Book is first of its kind to appear in USSR. How-
ever, it has many defects. Published by Ministry
of Communal Economy RSFSR, 1947, 99 pages, 24
drawings, 14 tables.

14/4946

14

24

Direct method of determination of the oxygen requirement of waste waters and precipitates. S. A. Noyanovskiy. *Gigiena i Sanit.* 13, No. 3, 1-6 (1948) (in Russian).—Absorption of O_2 is detd. in a closed vessel by manometric pressure measurements. CO_2 is absorbed in 10-20% NaOH placed in the same vessel, without direct contact with the water or ppt. examd. For pptg. samples of 4-12 g., dild. to 100 ml., 10 ml. 10-20% NaOH is used. The CO_2 evolved in the oxidation is absorbed completely; equil. of CO_2 between the liquid and the gas phase, and satn. with H_2O vapor, are reached in 5-10 min. The amt. of dissolved O_2 remains const., 6-8 mg./l., and its equil. is also established in 5-10 min. Shaking is essential. Results are reproducible within 5%. The rate of oxidation, in the direct method, is somewhat faster than in the nitrate method, but the end results are the same. The total O_2 requirement of insol. ppts. from dwelling waste waters is, on the av., 1 g. O_2 /1 g. volatile substance of the ppt. The rate of oxidation of the insol. ppt. is about 2-2½ times slower than oxidation of dwelling waste waters. Stabilized ppts. from the depth of river sediments have a considerably lower O_2 requirement, of the order of a few mg. per g. volatile substance. N. Thon

NESMEYANOV, S.A.

37532 Sanitarnaya Kharakteristika Promyshlennykh Stochnykh vod I nauchno-prakticheskiye zadachi v etoy oblasti v SB:XII vsesoyuz S'yezd gigiyenistov, epidemiologov, mikrobiologov I infeksionistov T.I.M., 1949, S: 88-91

SO: Letopis' Zhurnal'nykh Statey, Vol. 37, 1949

NESMEYANOV, S. A.

PA 56/49T83

USSR/Medicine - Water Purification
Medicine - Medical Societies

Apr 49

"Study of Reservoir Contamination and Development
of Methods for Purifying Industrial Drainage Waters
in 1949," S. A. Nesmeyanov, 1½ pp

"Gig i San" No 4

Conference of All-Union Hygienic Institutes,
Laboratories, and Chairs held 25-29 Apr 48 set up
a plan to study sanitation conditions of 31 river
and other type reservoirs situated in the industrial
center of the USSR. Traces organization of this
study since that time. Notes necessity for continued
work on methods to purify drainage.

56/49T83